

542941

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
26 August 2004 (26.08.2004)

PCT

(10) International Publication Number
WO 2004/072088 A2

(51) International Patent Classification⁷: **C07F**
(21) International Application Number:
PCT/JP2004/001514

(22) International Filing Date: 12 February 2004 (12.02.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2003-037399 14 February 2003 (14.02.2003) JP

(71) Applicant (for all designated States except US):
TAKASAGO INTERNATIONAL CORPORATION
[JP/JP]; 37-1, Kamata 5-chome, Ohta-ku, Tokyo 144-8721
(JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SUZUKI, Ken**
[JP/JP]; c/o Takasago International Corporation, Central
Research Laboratory, 4-11, Nishiyawata 1-chome, Hirat-
suka-shi, Kanagawa 254-0073 (JP). **HORI, Yoji** [JP/JP];
c/o Takasago International Corporation, Central Research
Laboratory, 4-11, Nishiyawata 1-chome, Hiratsuka-shi,
Kanagawa 254-0073 (JP).

(74) Agent: **IWATANI, Ryo**; Sakurabashi Chiyoda Bldg., 5F,
1-27, Dojima 2-chome, Kita-ku, Osaka-shi, Osaka 530-
0003 (JP).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,

MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,
GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

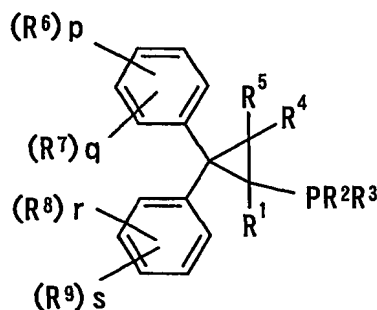
- as to applicant's entitlement to apply for and be granted
a patent (Rule 4.17(ii)) for the following designations AE,
AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,
EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,
JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,
MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM,
PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM,
ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD,
SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY,
KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG,
CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT,
LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ,
CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,
TG)
- of inventorship (Rule 4.17(iv)) for US only

Published:

- without international search report and to be republished
upon receipt of that report

[Continued on next page]

(54) Title: A PHOSPHINE COMPOUND, ITS INTERMEDIATE, ITS COMPLEX WITH PALLADIUM AND A MANUFACTURING METHOD OF UNSATURATED COMPOUNDS BY USING THE PALLADIUM COMPLEX



(1)

(57) Abstract: Palladium-phosphine complexes obtained by reacting a 5 compound of formula (1) below with a palladium compound: F(I) (wherein R¹ is a hydrogen atom, an alkyl group, a cycloalkyl group or a phenyl group which may be substituted; R² and R³ are each, the same or different, an alkyl group, a cycloalkyl group or a phenyl group which may be substituted; R⁴ and R⁵ are each, the same or different, a hydrogen atom, an alkyl group, a cycloalkyl group or a phenyl group which may be substituted; R⁶, R⁷, R⁸ and R⁹ are each, the same or different, an alkyl group, a cycloalkyl group, a phenyl group which may be substituted, an alkoxy group, a dialkylamino group, a halogen atom, a phenyl group, a benzyl group, a naphthyl group or a halogenated alkyl group; R⁶ and R⁷, R⁸ and R⁹ may be combined to form,

each, a fused ring, a trimethylene group, a tetramethylene group or a 20 methylenedioxy group; p, q, r and s are each an integer of 0 to 5; and p + q, and r + s are each in the range of 0 to 5.), which is a novel and efficient catalyst for manufacturing various useful compounds.

WO 2004/072088 A2



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.